

# **WASTE MANAGEMENT**

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## **INTRODUCTION**

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This staff analysis is intended to ensure that all the wastes that are generated during project construction and operation, are handled and disposed of according to applicable laws, ordinances, regulations, and standards (LORS), and will not create any significant adverse impacts.

Different types of wastes will be generated during the construction and operation of the proposed East Altamont Energy Center (EAEC) and will have to be managed appropriately to minimize the potential for adverse human and environmental impacts. These wastes are designated as hazardous or non-hazardous according to the toxic nature of their respective constituents. This analysis assesses the adequacy of the management plan proposed by the applicant, Calpine, doing business as East Altamont Energy Center, LLC for the handling, storage and disposal of these wastes in the amounts estimated for the project. The handling of the project's wastewater, for which a National Pollutant Discharge Elimination System (NPDES) permit is required, is discussed in the **Soil and Water Resources** section.

## **LAWS, ORDINANCES, REGULATIONS AND STANDARDS**

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### **FEDERAL**

#### **Resource Conservation and Recovery Act, RCRA, (42 U.S.C. § 6922)**

RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires the generators of hazardous wastes to comply with rules regarding the following:

1. Record keeping practices which identify the quantities and disposal of hazardous wastes generated;
2. Labeling practices and use of appropriate containers;
3. Use of a recording or manifest system for transportation; and
4. Submission of periodic reports to the EPA or an authorized state agency.

#### **Title 40, Code of Federal Regulations, section 260**

These sections specify the regulations promulgated by the Environmental Protection Agency, or EPA, to implement the requirements of RCRA as described above. To facilitate such implementation, the defining characteristics of each hazardous waste are specified in terms of toxicity, ignitability, corrosivity, and reactivity.

## STATE

### **California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended).**

This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control, or DTSC, under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt specific criteria and guidelines for classifying such wastes. The act also requires all hazardous waste generators to file specific notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

### **Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)**

These regulations specify the minimum standards applicable to the handling and disposal of solid wastes. They also specify the guidelines necessary to ensure that all solid waste management facilities comply with the solid waste management plans of the administering county agency.

### **Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)**

These sections establish specific requirements for generators of hazardous wastes with respect to handling and disposal. Under these requirements, all waste generators are required to determine whether or not their wastes are hazardous according to state-specified criteria. As with the federal program, every hazardous waste generator is required to obtain an EPA identification number, prepare all relevant manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, all hazardous wastes are required to be handled only by registered hazardous waste transporters. Requirements for record keeping, reporting, packaging, and labeling are also established for each generator.

## LOCAL

There are no local LORS that would apply to the proposed project.

## SETTING

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### **PROJECT AND SITE DESCRIPTION**

According to information from the applicant (EAEC 2001a, pages 1-1, 2-1, 8.1-1, 8.4-2, and 8.13-1), the proposed project is a natural gas-fired 1,100 MW facility to be located on approximately 40 acres within a 174- acre parcel of land in northeastern Alameda County near the Contra Costa and San Joaquin County borders. The site is bounded to the north by Byron Bethany Road, to the south by Kelso Road, and to the west by Mountain House Road. It is currently being used for crop farming, having been used in the past as a dairy farm. The surrounding area is currently used for agriculture and large infrastructure projects, the most important of which include the Western Area

Power Administration's (Western's) Tracy Substation, two pumping stations for the Delta-Mendota Canal and the California Aqueduct, Pacific Gas and Electric's (PG&E's) gas compressor station, numerous wind farms, four 500 kV transmission lines, four 230 kV lines, and several lower-voltage lines.

To assess the likelihood of soil contamination from past agricultural operations at the site, the applicant commissioned a Phase I Environmental Site Assessment (ESA) survey to identify any locations of specific chemical contamination. The survey was conducted according to procedures specified by the American Society for Testing and Materials (EAEC 2001a, page 8.13-1 and Appendix 8.13). This survey revealed the following main areas of potential contamination as detailed in the information from the applicant:

The residence and barn at the southwest corner that were used for farm chemical storage;

A former chicken coop that was used for pesticide storage, handling and preparation;

Former equipment storage and maintenance areas and related above-ground waste oil storage areas that could have been contaminated by chemical lubricants, and petroleum products; and

The site of an underground petroleum storage tank removed approximately 10 years ago.

The Department of Toxic Substances Control (DTSC) requested in its October 16, 2001 and February 14, 2002 memoranda to Commission staff that the applicant's intended Site Mitigation Implementation Plan (SMIP) be required to include specific procedures for (a) characterizing any such contamination with respect to constituents and concentrations, and (b) removing the constituent chemicals before site preparation and facility construction. Staff regards this DTSC request as appropriate for this project site and recommends a specific condition of certification (**WASTE-1**) to ensure compliance.

## **IMPACTS**

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### **PROJECT SPECIFIC IMPACTS**

#### **Construction Related Impacts**

As noted by the applicant (EAEC 2001a, pages 8.13-2 through 8.13-6), site preparation and construction for the proposed project and related facilities will generate both hazardous and non-hazardous wastes. The non-hazardous component of the construction-related wastes will include waste paper, wood, glass, scrap metal, and plastics, from packing materials, waste lumber, excess concrete, insulation materials, and non-hazardous chemical containers. The applicant estimates that up to 195 tons of such non-hazardous wastes will be generated (EAEC 2001, page 8.13-3). These wastes will be segregated, where practical, for recycling. Those that cannot be recycled will be placed in covered containers and removed on a regular basis by a certified waste handling contractor for disposal at a Class III facility.

The relatively small quantities of hazardous materials to be generated during this construction phase will mainly consist of used oil, waste paint, spent solvents, welding materials, batteries, and cleaning chemicals. These wastes will be recycled or disposed of at licensed hazardous waste treatment or disposal facilities (EAEC 2001a, page 8.13-4). As noted by the applicant (EAEC 2001a, page 2001a, page 8.13-4), the construction contractor will be considered the generator of the hazardous waste produced during construction and will be responsible for compliance with applicable federal and state regulations regarding licensing, personnel training, accumulation limits, reporting requirements, and record keeping.

### **Operations Related Impacts**

Under normal operating conditions, the facility will generate both hazardous and non-hazardous wastes as noted by the applicant (EAEC 2001a pages 8.13 through 8.13-6). The non-hazardous component will include routine maintenance-related trash, office wastes, empty containers, broken or used parts, and used packaging materials and air filters. Some of the wastes will be recycled to minimize the quantity to be disposed of in a landfill. The non-recyclables will be disposed of at a non-hazardous waste disposal facility. The volume of non-hazardous wastes from the proposed and similar gas-fired facilities is typically small and readily accommodated within area disposal facilities. For the proposed facility for example, the estimated 70 cubic yards to be generated per year, would easily be accommodated within the area's listed Class III landfills or waste disposal facilities. (EAEC 2001, page 8.13-7). The salt cakes from the project's zero-liquid discharge facility will be tested to establish the most suitable disposal option as a potentially designated waste. The designation for this waste will be specified together with the chosen disposal facility in the waste management plan for the operational phase. The implementing condition of certification is WASTE-4. The operations-related hazardous wastes will include spent air pollution control catalysts, used oil and air filters, used cleaning solvents, cooling tower sludge, and oily rags. As noted by the applicant (EAEC 2001a, page 8.13-4), some of these wastes will be recycled. These will include the spent air pollution control catalysts, used oil from equipment maintenance, and oil-contaminated materials such as rags or other cleanup materials. The non-recyclables will be disposed of in a Class I disposal facility.

### **POTENTIAL IMPACTS ON EXISTING WASTE DISPOSAL FACILITIES**

The applicant has provided a listing of the four area non-hazardous waste disposal facilities available for use (EAEC 2001a, page 8.13-7). This listing includes information on location, total permitted capacity, remaining capacity, and anticipated year of closure. This information shows that the volume of the waste from project construction and operation would be insignificant relative to available disposal capacity.

As discussed by the applicant (EAEC 2001a, pages 8.13-8 and 8.13-9), there are three major Class I landfills in California available for the disposal of hazardous wastes from the proposed and similar projects. These are Safety-Kleen's Buttonwillow Landfill in Kern County, Safety Kleen's Westmoreland Landfill in Imperial County, and the Chemical Waste Management Landfill in Kings County. There is a total of more than twenty million cubic yards of disposal space within these landfills, reflecting a total operational life of up to 90 years. The operational lives of these facilities are expected to be lengthened by two factors: (a) the success of the state's waste reduction program

in reducing the volume of wastes to be disposed of and (b) the phenomenon of out-of-state disposal of wastes deemed hazardous under California law, but not under federal law. Given this information, staff concludes that adequate disposal space would be available to serve the project throughout its operational life.

## **CUMULATIVE IMPACTS**

While the hazardous and non-hazardous wastes from construction and operation of the proposed EAEC will add to the total wastes generated in Alameda County and in California, staff does not consider the volume involved as significantly affecting the remaining operational lives of the landfills to be used. No modifications are recommended with respect to the applicant's proposed handling and disposal plans.

## **FACILITY CLOSURE**

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During any type of facility closure (whether temporary or permanent), the primary waste management-related issue of concern would be the potential for significant health impacts from worker or public exposure to hazardous materials on site. In the case of unexpected temporary closure, requirements under existing LORS (such as limiting hazardous waste accumulation time to 90 days and requiring proper containment) would be adequate to minimize exposures. By contrast, specific contingency plans are required with respect to temporary closures of more than 90-days to ensure removal of hazardous wastes and draining of all chemicals from storage tanks and other equipment.

A specific on-site contingency plan is also necessary in case of unexpected permanent closure, to ensure (a) the removal of hazardous materials and hazardous wastes, (b) the draining of all chemicals from storage tanks and other equipment, and (c) the safe shutdown of all equipment. For all such closures, a specific facility closure plan is required from the applicant at least twelve months before the start of closure-related activities

## **COMPLIANCE WITH APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)**

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Staff concludes from the applicant's submittal that their plan for managing the wastes from the project's construction, operation, and closure would be in accordance with existing LORS designed to minimize the potential for human health and environmental effects. The applicant will dispose of all project-related hazardous and non-hazardous wastes only at facilities they identify as appropriate for such purposes. An EPA identification number will also be obtained because of the applicant's potential status as a hazardous waste generator. Any on-site storage, handling or disposal of hazardous materials will be as required under California Code of Regulations, Title 22, Section 67100 et seq.

## MITIGATION

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The adequacy of the applicant's waste management plan is facilitated by their planned implementation of specific mitigation measures (EAEC 2001a, pages 8.13-9 through 8.13-12). The most significant of these measures include the following:

Storing hazardous wastes on site for less than 90 days and ensuring that such wastes are stored only in hazardous waste storage areas surrounded by containment structures;

Ensuring that hazardous wastes are handled and disposed of only by licensed hazardous waste handlers; and

Training facility workers with respect to waste handling, containment and minimization procedures.

Staff recommends specific conditions of certification to ensure implementation of these and the other facilitative measures.

## RESPONSE TO AGENCY COMMENTS

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### DEPARTMENT OF TOXIC SUBSTANCES CONTROL

The DTSC requested in their October 16, 2001 and February 14, 2002 memoranda to Commission staff that the applicant's SMIP be required to include specific procedures for characterizing any such contamination with respect to constituents and concentrations, and removing the constituent chemicals before site preparation and facility construction. As noted above, staff regards this DTSC request as appropriate for this project site and recommends a specific condition of certification (**WASTE-1**) to ensure compliance.

## CONCLUSIONS AND RECOMMENDATIONS

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Staff has determined that the applicant's waste management plan for the proposed EAEC would allow for compliance with LORS designed to minimize the potential for human health and environmental effects and will not cause a significant direct, or indirect, cumulative adverse impact.

To ensure implementation of all necessary mitigation measures, staff recommends adoption of the conditions of certification listed below.

## CONDITIONS OF CERTIFICATION

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**WASTE-1** The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the Compliance Project Manager (CPM) for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

**Verification:** At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM.

**WASTE-2** If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the San Francisco Regional Water Quality Control Board, the Alameda County Department of Environmental Health, and the Regional Office of the California Department of Toxic Substances Control for guidance and possible oversight.

**Verification:** The project owner shall submit any reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

**WASTE-3** The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

**Verification:** The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the Monthly Compliance Report of its receipt.

**WASTE-4** Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

**Verification:** The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

**WASTE-5** The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and

Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

**Verification:** No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM.

The operation waste management plan shall be submitted no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

## REFERENCES

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California Environmental Protection Agency and Regional Water Quality Control Boards, 1999. Wastes Allowed for Discharge at Disposal Facilities. April 24.

California Department of Toxic Substances Control, (CDTSC), October 16, 2001 Memorandum to Commission Staff on the Waste Management Section of the Application for Certification for the East Altamont Energy Center.

CDTSC, February 14, 2002 Memorandum to Commission Staff on the Waste Management Section of the Preliminary Staff Assessment (PSA) for the East Altamont Project.

EAEC (East Altamont Energy Center) 2001a. Application for Certification, Volume 1 & Appendices, East Altamont Energy Center (01-AFC-4), Dated March 20, 2001 and docketed March 20, 2001 at the California Energy Commission.